

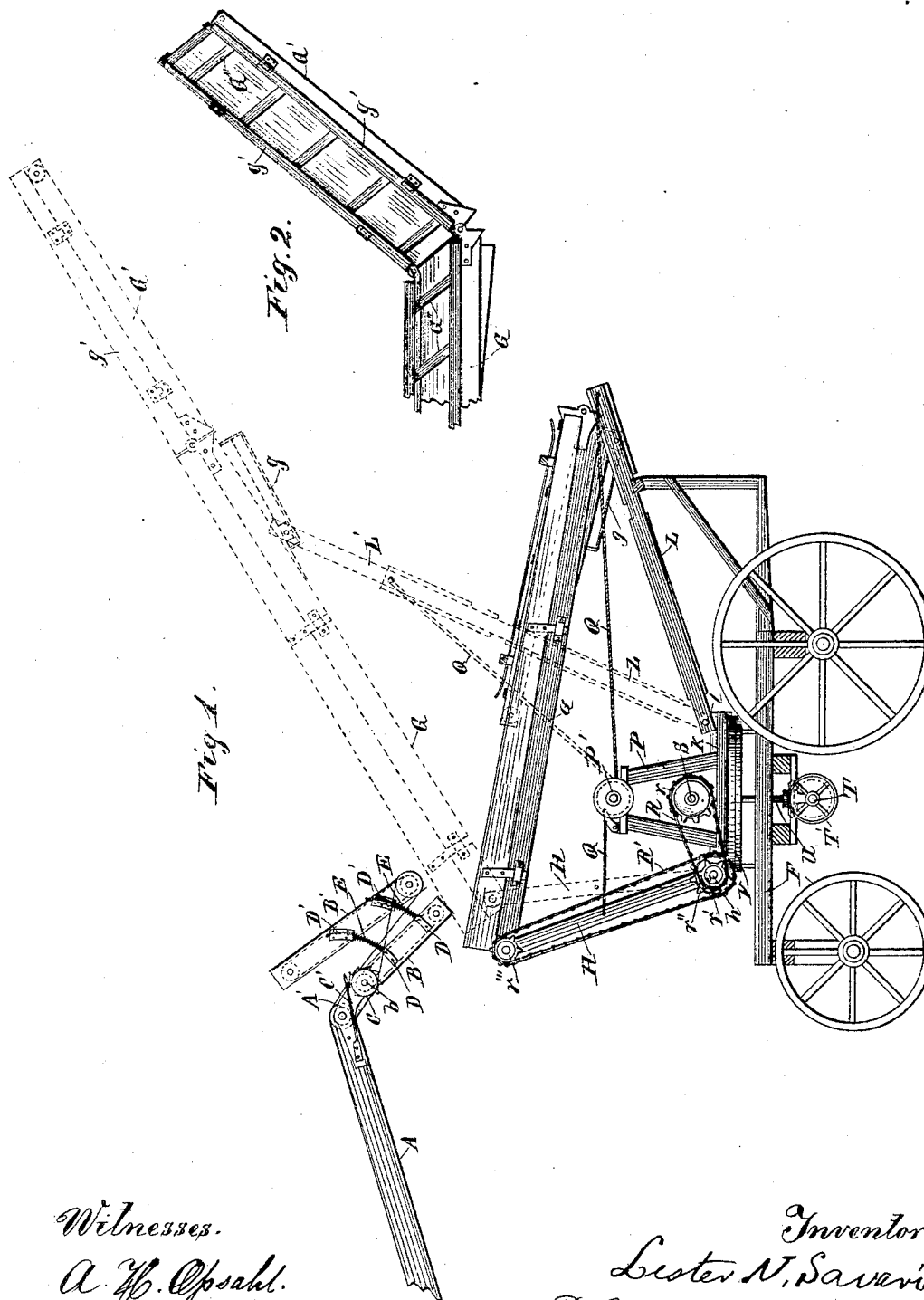
(No Model.)

2 Sheets—Sheet 1.

L. N. SAVARIA.  
STRAW STACKER.

No. 459,050.

Patented Sept. 8, 1891.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

LESTER N. SAVARIA, OF HOPKINS, MINNESOTA.

## STRAW-STACKER.

SPECIFICATION forming part of Letters Patent No. 459,050, dated September 8, 1891.

Application filed June 20, 1890. Serial No. 356,142. (No model.)

*To all whom it may concern:*

Be it known that I, LESTER N. SAVARIA, a citizen of the United States, residing at Hopkins, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Straw-Stackers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to thrashing-machines, and has for its object to provide certain improvements in the attachments used for conveying away the straw and delivering the same to the top of a stack.

The principal feature is a tailings-guide applicable to the end of the separator-frame for directing the straw therefrom to the stacker by a positive feed, thereby preventing its displacement by the wind or otherwise. This guide is in the form of a pair of endless carriers adjustable to and from each other and united by yielding or elastic connections. The straw is received between the two carriers, which adjust themselves to the volume thereof, and is directed positively into the stacker. The guide is adjustable angularly with reference to the plane of the separator, adapting it to the requirements of the stacker at its different elevations.

Other features are directed to details of the stacker for simplifying its construction and improving its efficiency, all of which are hereinafter described, and pointed out in the claims.

Referring now to the drawings, wherein like letters refer to like parts throughout, Figure 1 is a side elevation of the straw-stack and the straw-carrier end of the thrashing-machine separator. Fig. 2 is a perspective of a part of the stacker. Fig. 3 is a plan of the extensible pivoted support for elevating the free end of the stacker detached. Fig. 4 is a vertical section of a part of the revolving and reversing mechanism, and Fig. 5 is a plan view of a part of Fig. 4.

A is the straw-tailings end of the separator provided with a straw-carrier of the usual form.

B B' is the tailings-guide, of which B is the lower and B' the upper carrier-frame.

A' are angle-irons or bracket-like arms ex-

tending outward and downward from the frame A. *b* is a fixed shaft passing through the head of the lower carrier-frame B and the extremities of the arms A', pivotally securing the tailings-guide to the frame A.

C is a toothed wheel or ratchet rigidly secured to the end of shaft *b*, and C' is a spring-pawl secured to the frame A for engaging with said teeth to hold the guide at any desired angle to said frame. This pawl may be disengaged in any suitable manner, as by hand.

D D are curved arms rigidly secured to the lower carrier-frame and working through curved brackets or keepers D' D' on the upper carrier-frame; and E E are coiled springs mounted on the rods D D, and secured, respectively, at their lower ends to the lower ends of the rods D D and at their upper ends to the lower extremities of the keepers D' D', the tendency of the springs being to pull the frames approximately together, but permitting the same to be forced apart, as may be required by the quantity of the straw.

F is the stacker-truck.

G G' is the sectional folding stacker pivotally secured at its heel to the pivoted standard H, which in turn is secured at its lower end by shaft *h* to the turn-table K.

L L' is the extensible brace or support for the free end of the stacker, having its lower section pivotally secured by shaft *l* to the turn-table K. This support is made up of two telescoping sections L L', each of which is composed of parallel side-bars rigidly connected together in any suitable manner, but preferably by end braces M and truss-braces N. The advantage of this construction is that all parts of the extensible section move together, thus applying equal pressure to both sides of the stacker.

P is a windlass-frame mounted on the turn-table K, and P' the windlass thereon, with hoisting-cables Q extending to the pivoted standard H and the outer section L' of the extensible support L L', passing over suitable sheaves for properly directing the same. The connection of the cable Q with the lower part of section L' is made by passing the cable through an eye on the upper end of the fixed section L.

R R' are sprocket-chains passing over sprocket-wheels *r r' r'' r'''* for conveying mo-

tion to the stacker-carrier G'' from the cross-shaft S on the turn-table.

T is the main driving-shaft for the stacker, provided with pulley T' and beveled gear T''.

5 U is a vertical shaft mounted in bearings on the truck-frame and turn-table, respectively, provided with a beveled gear U' on its lower end engaging with the gear T'', and also provided with a beveled gear U'' on its upper end engaging with the gear S' on the shaft S.

V is the largest stationary internal gear-wheel fixed to the stacker-truck F.

15 W is a vertical shaft mounted in bearings on the turn-table, having a pinion W' on its lower end engaging with the wheel V, and having a horizontal beveled gear-wheel W'' at its top.

20 S'' S''' are clutch pinions loosely mounted on the shaft S and engaging opposite sides of the horizontal gear-wheel W''.

25 X X' are clutches movable lengthwise of the shaft S and keyed to turn therewith and spaced apart by coiled spring X'', encircling the shaft between the two clutches.

Y is the clutch-sliding lever mounted in keepers Y' of a part of the turn-table.

Y'' is the pivoted trip-lever for operating the clutches through the sliding lever Y.

30 Z are the studs on the stationary internal gear-wheel V for tripping the lever Y''.

It is evident that by sliding the clutches X X' in one direction or the other either clutch may be made to engage with its adjacent pinion. Hence the table will revolve in one direction or the other, according to which pinion is made fast with the shaft S. By the trip-studs Z and the levers Y'' and Y' these clutches are shifted at the end of limited movements of the turn-table, thus reversing its direction.

The fold-section G' of the stacker is provided with pivotally-attached side bars or guards g', which fold inward over the carrier G'', as before described. These pivoted guards, when folded in this manner, serve to secure the carrier to the fold-section to prevent its displacement from its driving-rollers when folding and unfolding, saving time and preventing a great amount of wear and tear. In folding the outer section G' over the fixed section G the operator will naturally hold the side bars in their infolded position until the outer section G' is turned sufficiently far toward the fixed section G for the ledges on the fixed section to come into effect to hold the side bars from swinging outward under the influence of gravity, or otherwise the hinges may have such friction as to prevent the side bars from opening out by gravity. The heel-section G of the stacker is provided with a longitudinal guide g for the upper end of the extensible support L L'. As shown, this guide is in the form of an angular iron bracket secured to the upper end of the heel-section G. The top cross-brace M of the section L' of the extensible support works in these guides g,

thus permitting the stacker to be elevated or lowered to a considerable extent by the swinging movement of the support L L' on its pivot without separating its telescoping sections. This is due to the direction of the line of strain on the cable.

The operation is evident from the description already given.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. In a straw-stacker, the combination, with the stationary internal gear-wheel, of the revoluble stacker-supporting table provided with a shaft having pinion engaging said internal wheel, a horizontal bevel-gear on said shaft, a cross-shaft having a pair of bevel loose clutch-pinions engaging opposite sides of said horizontal gear, and a double-clutch member slidable on said shaft for rendering one or the other of said pinions rigid therewith at will.

2. In a straw-stacker, the combination, with the stationary internal gear-wheel, of the revoluble stacker-supporting table provided with a shaft having a pinion engaging with said gear-wheel, a horizontal bevel gear-wheel on said shaft, a cross-shaft having a pair of loose bevel-pinions engaging opposite sides of said horizontal gear, a double-clutch member slidable on said shaft to render one or the other of said pinions operatively engaged with said horizontal gear at will, a pivoted lever with a connection to said clutches, and a tripping device for tripping said lever to shift the clutch and reverse the movement of the table at the end of a limited rotary movement, substantially as described.

3. The combination, with the separator A, of the tailings-guide B B', pivotally connected at its upper end to the separator, the fixed ratchet C, mounted on the guide, and the catch C', mounted on the separator for engaging with the ratchet to hold the guide at any desired angle to the separator, substantially as described.

4. The tailings-guide comprising the carrier-frames B B', the curved arms D D, secured to the lower frame and working through the curved keepers D' D', secured to the upper frame, and the coiled springs E E on said arms.

5. The combination, with the separator and the stacker, of the bracket-arms A', fixed to the separator, the carrier-frames B B', the shaft b, pivotally connecting the said frames with the said arms, the fixed ratchet C, the catch C', engaging said ratchet, the curved rods D D on the frame B, working through the keepers D' D' on the frame B', and the coiled springs E E on the rods D D, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

LESTER N. SAVARIA.

Witnesses:

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EMMA F. ELMORE.